Spatial coverage

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Meaning & purpose

Spatial coverage refers to a geographical area where data was collected, a place which is the subject of a collection, or a location which is the focus of an activity. This may be described using geospatial coordinates for a point or an area (for example, latitude and longitude), or through the use of place or regional names (for example, Barrow Island; Gippsland). Regional names may be based on legal jurisdiction (for example, South Australia).

Spatial coverage information enables users to limit search results to a defined geographic location or area. This makes it possible to connect data from the same location and to address complex cross-disciplinary research questions based on location. It also makes it easier to integrate data and information programmatically into research applications, tools and data archives.

Spatial coverage is contained within the Coverage element wrapper.

Spatial Coverage attributes

Spatial Type

A Spatial Type is required. Preferably specify a type from the Spatial Type vocabulary:

Type	Explanation
dcmiPoint	Spatial location information for a point in space specified in DCMI Point notation.
gmlKmlPolyCoords	A set of KML long/lat co-ordinates derived from GML defining a polygon, as described by the KML coordinates element but without the altitude component.
gpx	GPX (the GPS Exchange Format) is a light-weight XML data format for the interchange of GPS data (waypoints, routes, and tracks) between applications and Web services on the Internet.
iso31661	ISO 3166-1:2006 Codes for the representation of names of countries and their subdivisions - Part 1: Country codes.
iso31662	ISO 3166-2:2007 Codes for the representation of names of countries and their subdivisions - Part 2: Country subdivision codes.
iso31663	ISO 3166-3:1999 Establishes codes for country names which have been deleted from ISO 3166-1 since its first publication in 1974.
iso19139dcmiBox	DCMI Box notation derived from bounding box metadata, conformant with the ISO/TS 19139:2007 schema.
kmlPolyCoords	A set of KML long/lat co-ordinates defining a polygon as described by the KML coordinates element.
text	Free-text representation of spatial location. Use this to record place or region names where geospatial notation is not available.

Language attribute

The language in which the spatial coverage metadata is recorded may be included in the Lang attribute, but is not displayed or searchable in Research Data Australia. The RDA Registry accepts language codes consistent with IETF's BCP (Best Current Practice) 47: Tags for Identifying Languages (incorporating RFC 5646). Language codes may be selected from:

- IANA Language subtag registry (an IANA Language subtag lookup tool is available also)

Use in Research Data Australia

Geospatial information recorded in the Spatial Coverage element will generate maps in Research Data Australia, if valid, correctly formatted information of Types "dcmiPoint", "iso19139dcmiBox", "gmlKmlPolyCoords" or "kmlPolyCoords" is provided. Multiple points or polygons will all be displayed on the one map.

Examples of spatial coverage in records in Research Data Australia:

- A point location
- An area

Best Practice

- The geospatial information format must be specified using Spatial Type e.g. *kmlPolyCoords*
- Include the spatial values e.g. *latitude and longitude coordinates*. If you are entering metadata manually into the RDA Registry, you can search for places or regions or draw points or areas onto the map directly. An alternative is to use Geoscience Australia's Place Names Search which includes places names, boundaries and physical features.
- To display a map in Research Data Australia, ensure valid spatial data of types *dcmiPoint, iso19139dcmiBox, gmlKmlPolyCoords* or *kmlPolyCoords* is provided.
- To display more than one point or polygon on a map, add each point or polygon into repeated XML elements.
- Spatial coverage is not relevant to parties. Do not use for party records.

RIF-CS v1.01 users only ...

In RIF-CS v1.0.1 spatial coverage was provided using the Location element, with type="coverage". The information below applies only to those users. Upgrade of feeds to the current version of RIF-CS is recommended to take advantage of schema enhancements and the new Research Data Australia display.

Spatial coverage using RIF-CS v1.01:

```
<location type="coverage">
 <spatial type="iso19139dcmiBox">northlimit=-20.4; southlimit=-21;
westlimit=115.2; eastLimit=115.6; projection=WGS84</spatial>
</location>
```

XML encoding examples

Spatial coverage using Bounding Box of Type iso19139dcmiBox:

```
<coverage>
  <spatial type="iso19139dcmiBox">northlimit=-20.4; southlimit=-21;
westlimit=115.2; eastLimit=115.6; projection=WGS84</spatial>
</coverage>
```

Spatial coverage using Country Code and Type iso3166:

```
<coverage>
  <spatial type="iso3166">AU</spatial>
</coverage>
```

Spatial coverage using KML coordinates:

```
<coverage>
   <spatial type="kmlPolyCoords">115.625357,-31.767240 115.754393,
-31.774751 115.757967,-32.462250 115.513179,-32.393528</spatial>
</coverage>
```

Change history

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Date	Change history
April 2010	Consultation draft
26 Oct 2010	RIF-CS 1.2.0 changes and examples added
6 Jan 2011	RIF-CS 1.2.0 examples corrected to show temporal coverage dateFormat on date type as specified in schema; examples for describing open-ended collections added
6 Dec 2011	Page restructured to separate RIF-CS v1.0.1 information to avoid confusion; information about display of temporal information added; Research Data Australia image updated
8 Jun 2012	Added ISO3166 example
5 Jul 2012	Added advice to use W3CDTF format
16 Jul 2012	Corrected links to ISO 3166 information
Nov 2012	Spatial and Temporal pages split into two pages
May 2013	Updated RDA screen shot to Release 10 interface
20 Jan 2017	Added kml coordinates example